

tudinal veins, one before and the other beyond the outer cross vein. The head is similar to that of *Sapromyza* and *Minettia*, the intra-alar bristle is present as in the latter genus, and there is but one sternopleural bristle present. The black costal setulae do not extend to apex of third vein, and the preapical tibial bristle is present.

*Genotype*.—*Xenopterella obliqua*, new species.

XENOPTERELLA OBLIQUA, new species

*Male and female*.—Shining fulvous yellow. Ocellar spot and a mark on middle of occiput fuscous; a mark between each antenna and eye, and the palpi, black. A large mark across upper part of sternopleura, and most of scutellum, fuscous. Abdomen more or less infuscated. Legs yellow. Wings yellowish hyaline, with dark brown and yellowish markings as in figure 1.

Frons distinctly less than half of the head width, orbits hardly differentiated, ocellar bristles longer than the postverticals and orbitals; arista distinctly pubescent; eye about as high as long; face not convex. Thorax with three pairs of postsutural dorsocentrals and one pair of distinct prescutellar acrostichals; intradorsocentral setulae in about six series; intra-alar rather weak; scutellum convex, bristles subequal; propleural bristle not distinguishable in any specimens before me. Fore femur without anteroventral comb; hind femur without distinct preapical anteroventral bristles. Venation as in figure 1; veins not setulose.

Length, 4 mm.

*Type*.—Male allotype, and one paratype in poor condition, Mexico City, Mexico, May 22, 1922 (E. G. Smyth). Cat. No. 28437, U.S.N.M.

This species has much the appearance of a Trypetid, but is a true Sapromyzid.

STENOLAUXANIA, new genus

*Generic characters*.—Similar to *Lauxaniella* Malloch, differing from it in having the face transversely striate, the frons with fainter striae, and the anterior orbital bristle curved mesad.

*Genotype*.—*Stenolauxania striata*, new species.

STENOLAUXANIA STRIATA, new species

*Male and female*.—Black, subopaque, abdomen shining. Head black, interfrontalia shining, with a slight violet or purple tinge, orbits opaque black; face shining; first and second antennal segments and extreme base of third yellow, remainder of third black; arista black; palpi fuscous. Thorax with a slightly shagreened appearance on dorsum. Abdomen black. Legs tawny yellow, apices of fore

tibiae and basal two segments of fore tarsi black. Wings fuscous, with a broad costal streak on basal two thirds, and a spot in first and second posterior cells, hyaline.

A slender species. Ocellar bristles microscopic; postverticals minute; anterior incurved orbital bristles small; interfrontalia shagreened and more or less transversely striate; face rounded out in centre and with numerous quite prominent transverse striae; basal segment of antennae as long as second; haired below, third segment about seven times as long as wide, entire antennae distinctly longer than height of head; arista plumose. Prescutellar acrostichal bristles absent. Fore tarsi elongate and thickened. Inner cross vein distinctly beyond middle of discal cell; extreme apex of fourth vein bent down slightly.

Length, 4-5 mm.

*Type*.—Male, allotype, and five paratypes, Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28438, U.S.N.M.

This species is readily distinguished by its striate face and marked wings, though one species of *Lauxaniella*, *nubecula*, described in this paper has the wings marked in similar manner.

#### LAUXANIELLA NUBECULA, new species

*Male*.—Black, shining. Head black, frontal orbits, face, and cheeks, glossy, parafacials and sides of occiput silvery pruinulent; arista and basal two segments of antennae yellow, third segment black. Thorax black, slightly shining, greasy in type, but apparently with whitish pruinescence, a dark central, and interrupted lateral, dorsal vittae; apex of scutellum velvety black; pleura whitish pruinulent. Legs pale yellow, with white dusting on tibiae and tarsi, coxae and femora blackish, apices of latter yellow. Wings dark brown, hyaline at base, rather broadly along costa to beyond middle, and in outer part of second posterior cell. Halteres yellow.

Frons a little over one-third of the head width at vertex, wider anteriorly, each orbit wider than interfrontalia above, equal to it below; ocellars weak; orbitals strong; total length of antenna greater than height of head, basal two segments subequal in length, third about ten times as long as wide, and longer than arista, the latter plumose; face smooth, prominently and evenly convex, with a linear diagonal depression on each side below eye level. Thorax and abdomen slender. Preapical tibial bristle distinct. Inner cross vein beyond middle of discal cell.

Length, 6 mm.

*Type*.—Cano Saddle, Gatun Lake, Panama Canal Zone, August 6, 1923 (R. C. Shannon). Cat. No. 28474, U.S.N.M.

This is the largest species of the genus known to me and the only one so far described in which the wings are distinctly pictured. The wing markings resemble those of *Stenolauxania striata* described in this paper.

#### CEPHALELLA, new genus

*Generic characters.*—Resembles *Lauxaniella* Malloch, having the antennae similar and the anterior orbital bristle sloping backwards. The face is prominently convex, with a large rounded convexity outstanding on each side; the labrum is exposed and over half as high as face below antennae; the postverticals are of moderate size, situated just below the sharp vertex; ocelli small and quite close, no ocellars present; eye higher than long. Propleural bristles indistinguishable; sternopleural 1.

*Genotype.*—*Cephalella fumipennis*, new species.

#### CEPHALELLA FUMIPENNIS, new species

*Female.*—Head shining testaceous yellow, a small blackish mark on ocellar region and another at base of each anterior orbital bristle, the large lateral facial convexities and labrum deep black, with a violet tinge, centre of latter yellow; third antennal segment and palpi fuscous. Thorax testaceous yellow, dorsum anteriorly with lateral margins and three discal vittae fuscous, these posteriorly entirely fused; pleura yellowish only anteriorly and on lower posterior portion. Abdomen shining black. Legs testaceous yellow, fore tarsi black, apices of fore femora, of hind tibiae, and of mid and hind tarsi, darkened. Wings brown, paler posteriorly and in centre of cells. Halteres brown.

Head higher than long; frons about 1.5 as long as wide and fully one-third of the head width, surface glossy, orbits not differentiated, bristles of moderate length, hairs absent; antennae elongate, basal segment as long as second, haired at apex below, the two combined about one-fourth as long as third, the latter slender, about ten times as long as wide; arista shorter than third antennal segment, plumose. Thorax elongate, with two or three pairs of dorsocentrals in front of scutellum and a series of hairs in line with them anteriorly. Fore femur without anteroventral comb; fore tibia and tarsi thickened. Inner cross vein at about two-fifths from apex of discal cell; outer at fully its own length from apex of fifth; last section of fourth about 2.25 as long as preceding section.

Length, 5 mm.

*Type.*—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28439, U.S.N.M.

## Genus CAMPTOPROSOPELLA Hendel

As there are several new species of this genus amongst the material before me, I present a complete key to the species of the genus known from the New World.

## KEY TO SPECIES

- |  |                                   |
|--|-----------------------------------|
| 1. Wings largely or entirely fuscous brown, or with clear-cut dark markings -----  | 2                                 |
| Wings hyaline or slightly yellowish -----  | 3                                 |
| 2. Wings almost entirely fuscous brown; dark brownish species.   |                                   |
| <i>dolorosa</i> Williston.   |                                   |
| Wings with clear-cut dark markings; testaceous yellow species.   |                                   |
| <i>maculipennis</i> Malloch.   |                                   |
| 3. Thorax and abdomen black; third antennal segment black. <i>atra</i> , new species.  |                                   |
| Thorax and abdomen entirely or almost entirely yellow; third antennal segment black at apex only -----   | 4                                 |
| 4. Palpi entirely yellow -----   | <i>flavipalpis</i> , new species. |
| Palpi black at apices -----  | 5                                 |
| 5. Abdomen with a large black spot on each side of third and another on fourth tergite; prescutellar acrostichals absent. <i>latipunctata</i> , new species. |                                   |
| Abdomen without black spots -----  | 6                                 |
| 6. Arista more sparsely plumose above -----  | <i>vulgaris</i> Fitch.            |
| Arista densely plumose above -----   | <i>verticalis</i> Loew.           |

## CAMPTOPROSOPELLA ATRA, new species

*Male and female*.—Head yellow, ocellar spot and third antennal segment black, palpi fuscous. Thorax and abdomen shining black. Legs tawny yellow, coxae, mid and hind femora almost entirely blackened, fore femora less so. Wings slightly brownish. Halteres fuscous.

Ocellar bristles about as large as the postverticals and incurved anterior orbitals; third antennal segment not much tapered apically, fully twice as long as its basal width; arista moderately densely plumose. Prescutellar acrostichals small.

Length, 2.25 mm.

*Type and 2 paratypes*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28440, U.S.N.M.

The only known black species of the genus.

## CAMPTOPROSOPELLA LATIPUNCTATA, new species

*Female*.—Shining tawny yellow. An oval spot over ocelli, apices of third antennal segment and palpi, and a large spot on each side of third and another on fourth visible tergite, black. Fore tarsi brownish. Wings yellowish.

Frons half of the head width; ocellar and postvertical bristles fine and not very long; third antennal segment fully 2.5 as long as wide; arista as in *vulgaris* Fitch. Thorax without prescutellar

acrostichal bristles. Inner cross vein about three-sevenths from base of discal cell; penultimate section of fourth vein half as long as ultimate.

Length, 3 mm.

*Type and 5 paratypes.*—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28442, U.S.N.M.

**CAMPTOPROSOPELLA FLAVIPALPIS, new species**

*Female.*—Similar to the preceding species in color, but the ocellar spot is very small and much paler, the palpi are entirely yellow, and the abdomen lacks the large black lateral dorsal spots.

Frons not half of the head width; ocellar bristles very fine and close together at bases. Prescutellar pair of acrostichals present. Inner cross vein at two-fifths from base of discal cell; penultimate section of fourth vein fully four-fifths as long as ultimate section.

Length, 3 mm.

*Type and 5 paratypes.*—San Mateo, Costa Rica (P. Schild). Cat. No. 28441, U.S.N.M.

The only species with unmarked wings and yellow palpi so far recorded.

**SETULINA, new genus**

*Generic characters.*—Similar to *Minettia*, but the base of stem vein (radius) is furnished with a series of setulae on its hind side above proximad of humeral vein.

*Genotype.*—*Setulina prima*, new species.

**SETULINA PRIMA, new species**

*Female.*—Tawny yellow, thorax and abdomen shining. Frons opaque, shining only on orbits and triangle; ocellar spot black; sides of face white dusted. Abdomen with black apices to tergites, the dark color carried angularly forward on median line, especially on tergites 3 and 4. Legs yellow. Wings yellowish hyaline, a deep brown mark along costa from apex of auxiliary vein which extends over second vein to beyond outer cross vein at which point it expands, covering tip of wing from costa to a little over fourth vein, a quite conspicuous dark brown cloud over each cross vein, the one on inner connecting with the costal streak. Halteres dusky yellow.

Frons less than one third of the head width, surface hairs weak, orbital bristles strong, recurved; ocellar bristles of moderate length, shorter than the cruciate postverticals, the latter far removed from posterior ocelli; arista rather long haired; cheek very narrow; upper postocular setulae very strong. Thorax with two pairs of strong, and one pair of weak, anterior, dorsocentral bristles, a pair of long prescutellar acrostichals, intra-alar strong, one bristle behind

and two in front of supra-alar; intradorsocentral setulae in about 12 series; both sternopleurals strong; mesopleura with a few short bristles besides the usual long one; scutellum flat above, bristles equal; prosternum haired. Abdomen stout. Fore femur without anteroventral comb; mid femur with a series of short stout bristles on apical half of anterior surface, and one at apex on posterior surface; mid tibiae unarmed posteriorly. Inner cross vein at about one third from base of discal cell; last section of vein 4 about twice as long as preceding section.

Length, 6 mm.

*Type*.—Cacao Trece Aguas, Alta Vera Paz, Guatemala (Barber and Schwartz). Cat. No. 28443, U.S.N.M.

#### DRYOMYZOIDES, new genus

*Generic characters*.—Ocellar bristles minute, postverticals and orbitals long, anterior orbitals farther from eye than posterior pair. Intra-alar present; anterior sternopleural minute. First and third wing veins setulose above, the former apically, the latter basally to beyond inner cross vein.

*Genotype*.—*Dryomyzoides advena*, new species.

#### DRYOMYZOIDES ADVENA, new species

*Male and female*.—Tawny yellow, shining. Face white dusted on sides; ocellar spot dark. Fore tarsi from before apex of basal segment, mid and hind pairs with apical two segments, blackish. Wings clear, both cross veins, and to a lesser extent the apices of third and fourth veins, slightly clouded.

Orbits not differentiated; surface of frons with some minute hairs; arista pubescent; lower margin of back of head with two long downwardly directed bristles on each side; eye higher than long. Thorax with three pairs of strong dorsocentrals, a strong pair of prescutellar acrostichals, and about 10 series of intradorsocentral setulae; scutellum flat above, transverse between the apical bristles; prosternum bare; propleural bristle minute. Bristles on apices of abdominal tergites strong; hypopygium of male small; genitalia of female without thorns. Fore femur without the anteroventral comb; mid tibia without distinct posterior median bristles. First posterior cell of wing slightly narrowed apically; the three sections of fourth vein subequal in length; sixth vein rather long and distinct, extending almost to margin of wing; outer cross vein at not more than half its own length from apex of fifth vein.

Length, 8–9 mm.

*Type*.—Female, Alta Boa Vista, Rio de Janeiro, Brazil, August 9, 1915 (P. G. Russell). Allotype and one female paratype mounted

on same pin, and one female paratype, Rio de Janeiro, Brazil, December 31, 1918 (R. Fischer, Deutsches Entomol. Institut.). Cat. No. 28444, U.S.N.M.

Agrees well with description of *Dryomyza advena* Wiedemann, but a true Sapromyzid.

#### NEOMINETTIA, new genus

*Generic characters.*—Third wing vein with fine widely separated setulae on its underside basally; scutellum with numerous black setulae on sides of disk; posterior inter-alar bristle present; costal setulae not extending to apex of third vein; mid tibia without pronounced bristles on posterior side.

*Genotype.*—*Musca contigua* Fabricius.

#### NEOMINETTIA CONTIGUA (Fabricius)

A shining tawny yellow species with conspicuously marked wings, the markings brown, consisting of a costal streak which extends round apex of wing to fourth vein and fills the marginal cell, a cloud over each cross vein, the one on inner connected with the costal streak, and between it and apex two similar spots projecting from the costal streak on to disk as far as third vein (fig. 20).

Both pairs of orbital bristles strong and sloped backward; ocellars fine, shorter than postvertical pair; arista short plumose. Thorax with three pairs of strong dorsocentrals and one pair of prescutellar acrostichals; a rather pronounced bristle in front of and another behind the supra-alar.

Length, 5.5–6.5 mm.

Described from Brazil and subsequently recorded from Mexico. I have seen it from Colima Vulcano, Mexico (L. Conrad), and Higuito, San Mateo, Costa Rica (P. Schild).

The setulose third vein and scutellum are sufficient to distinguish this genus from its allies, the latter character being unique in the family so far as I know at this time. No other species of the genus is known to me.

#### CHAETOMINETTIA, new genus

*Generic characters.*—Third wing vein with a few strong setulae at base on upper surface; mid tibia with some short but distinct bristles on posterior side; intra-alar bristle generally present, sometimes weak; costal setulae not extending to apex of third vein; anterior sternopleural bristle weak or absent.

*Genotype.*—*Chaetominettia spinitibia*, new species.

## CHAETOMINETTIA SPINITIBIA, new species

*Female*.—Fulvous yellow. Parafacials with white pruinescence; frons entirely shining. Wings yellowish, both cross veins distinctly but not conspicuously clouded.

All frontal bristles except the ocellar pair strong, the latter very small and weak, the postvertical pair as far behind ocelli as distance of latter from eye, a few fine hairs on orbits; arista plumose; face broadly convex; eye narrowed below. Thorax with three pairs of strong dorsocentrals and one pair of presutural acrostichals; intralarar weak; scutellum flat, apex transverse between bristles, the two pairs of bristles equal. Bristles on apices of tergites of abdomen, except on apical one, rather strong. Fore femur without anteroventral comb; mid tibia with three or four posterior bristles. Inner cross vein close to middle of discal cell; last section of fourth vein but little longer than preceding section.

Length, 5.5 mm.

*Type and 2 paratypes*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28145, U.S.N.M.

Distinguished from the following species by the absence of conspicuous marks on the wings.

## CHAETOMINETTIA LATELIMBATA (Macquart)

Differs from the preceding species in having the cross veins and apices of veins 2, 3, and 4 conspicuously clouded with dark brown, the clouds on apices of the longitudinal veins carried backward along veins, that on fourth vein nearly connecting with the one on outer cross vein, the one on second extending midway to apex of first vein, and usually there is a fainter costal suffusion nearly to base of wing.

Structurally and in chaetotaxy similar to *spinitibia*, but the outer cross vein is noticeably beyond middle of discal cell.

Length, 4–5 mm.

Apparently a widely distributed species, the material before me being from Trinidad, British West Indies; Panama Canal Zone; Bahia, and Rio de Janiero, Brazil; Costa Rica; and Paraguay.

It is probable that this species has been described under other, and possibly earlier, names than the above, but I can not make certain of this.

In connection with this genus it is pertinent to state that there is one species before me from Panama, which has the third vein bare and bristles on the posterior side of mid tibia. In other respects it appears to be a *Minettia* and is very similar to *spinitibia* described above.

The foregoing four genera are distinguished from all but three or the previously described genera of the family in having one or



more of the discal wing veins with setulose hairs on part of their upper or under surfaces. I present a key to these genera as the best method of elucidating their distinctions.

## KEY TO GENERA WITH SETULOSE VEINS

1. Third vein bare both above and below..... 2  
    Third vein setulose either above or below basally..... 3
2. Base of radius setulose on posterior side above basad of humeral cross vein; second vein bare basad of furcation with third... *Setulina*, new genus.  
    Base of radius bare; second vein on its upper surface with two or more setulae basad of its furcation with third..... *Xenochaetina* Malloch.
3. First and third veins setulose above; posterior intra-alar bristle strong.  
    ..... *Dryomyzoides*, new genus.  
    Only the third vein setulose..... 4
4. Intra-alar bristle present; third vein setulose below on both sides of inner cross vein; scutellum setulose on sides of disk.  
    ..... *Neominettia*, new genus.  
    Intra-alar bristle present or absent; third vein setulose at base above, base below; scutellum without discal setulae..... 5
5. Mid tibia with some very distinct posterior bristles besides those at apex; intra-alar bristle present, sometimes very weak.  
    ..... *Chaetominettia*, new genus.  
    Mid tibia without evident median posterior bristles; intra-alar absent... 6
6. Fore femur without preapical anteroventral comb; pteropleura bare.  
    ..... *Peplomyza* Haliday.  
    Fore femur with a distinct preapical anteroventral comb of short black setulae; pteropleura with some fine black hairs in center.  
    ..... *Eusapromyza* Malloch.

## Genus CHAETOCOELIA Giglio-Tos

A genus containing species in which the wings are deep fuscous brown on the costal half or more, the hind margin having a large irregular patch in second posterior cell and the border basad of apex of fifth vein irregularly hyaline. Structurally there is little difference between the genus and *Minettia*, which it most nearly resembles, about the only one consisting of small raised bases to the orbital bristles and a small elevation between each antenna and eye.

## CHAETOCOELIA TRIPUNCTATA, new species

*Female*.—Head and thorax fuscous brown, yellowish at bases of frontal bristles; face yellowish, the usual pair of dark spots not very prominent; antennae brownish yellow; palpi yellow. Abdomen and legs clay yellow. Wings fuscous, hind margin narrowly irregularly hyaline basad of apex of fifth vein, the large marginal hyaline mark in first posterior cell with a slender branch extending almost to fourth vein just behind middle of its last section, a small round hyaline spot a little above fourth vein and about one third from apex of its last section, a similar spot below third vein almost in oblique

line with the last spot and apex of second vein, and a third and slightly larger spot almost directly above the first one and in the cell above it, the three forming and almost equilateral triangle; discal cell all dark; inner cross vein and upper extremity of outer one darker than other veins; costal margin in front of apices of auxiliary and first veins pale. Halteres dusky yellow.

Bases of frontal bristles but little elevated; arista very short pubescent. Thorax with three pairs of dorsocentrals, one prescutellar pair of acrostichals, one pair of strong intra-alars, and about six series of intradorsocentral setulae; scutellum short, flat above. Veins 3 and 4 distinctly divergent apically. Fore femur without an anteroventral comb.

Length, 4 mm.

*Type and paratype*.—Female, Cat. No. 28446, U.S.N.M., Barro Colorado, Panama Canal Zone, July 18 and 9 respectively (R. C. Shannon).

Most closely related to *angustipennis* (Williston), differing in having the abdomen entirely yellow, the wing without discal cellular marks, etc.

#### Genus MINETTIA Robineau-Desvoidy

The present concept of the genus *Minettia* is a rather broad one and it is very probable that with further intensive study it may be split into several genera or subgenera. The typical forms, basing this concept upon the genotype, are robust black species with the face more or less tumid on each side below and the wings without conspicuous black markings except sometimes at bases. In these the mid tibia has no distinct median bristles on posterior side and there is never a bristle in line between the intra-alar and supra-alar bristles, while all the wing veins are devoid of setulose hairs. In this paper I include some species in the genus which have posterior bristles on the mid tibia, as well as some which have the thorax with a bristle in line between the intra-alar and supra-alar bristles. There are also several species in which the wings are conspicuously marked apically, and which are much less robust than the genotype, without tumid areas on the lower part of face.

I consider it better to leave these aberrant forms in this genus in the meantime as more material obtained from South America is necessary to enable one to arrive at a definite conclusion as to the merits of the characters referred to as generic indices. Any such aberrations as are present in the species dealt with in the paper are indicated in the text.

I have grouped the species dealt with according to what I consider to be their relationships. The first four all have the face and scutel-

lum punctate with black and belong to the same group as *valida* Walker, the fifth has no spot on the face but has the scutellum bipunctate at apex, while the sixth has the scutellum and face impunctate, though closely related to the fifth. The others except *bipunctata*, are quite distinct from this first group, belonging for the most part to one more aberrant, the mid tibia being bristled in some, and other chaetotaxic characters occurring in all which distinguish them from the other segregates of the genus.

MINETTIA TRIPUNCTICEPS, new species

*Female*.—Clay yellow, slightly shining, with the following parts black: a vitta on frons occupying the median fourth of its entire surface, basal two segments of antennae, arista, two round spots above middle of face and one on its lower margin, a mark below each eye, sides of labrum, palpi except bases, four vittae on dorsum of thorax, the median pair extending over bases of the apical scutellar bristles, a series of large spots on middle of dorsum of abdomen except on first visible tergite, a narrow fascia on each side on hind margin of each tergite which widens out and extends along the extreme lateral margins. A spot on anterior side at apices of fore femora and a band near bases of mid and hind tibiae fuscous. Wings yellowish, dark brown along costa back as far as second vein, the dark color extending obliquely across wing from a little proximad of outer cross vein to middle of second posterior cell and covering entire apex of wing, both cross veins broadly dark brown, the cloud on outer one almost connected with the dark apical mark, and a dark suffusion along entire length of fifth vein. Halteres yellow.

Structurally similar to *valida* Walker. Frontal bristles except the minute ocellars strong and long; arista plumose. Thorax with three pairs of long postsutural dorsocentral and one pair of prescutellar acrostichal bristles; the intradorsocentral setulae in about ten series. Fore femur without anteroventral comb. Outer cross vein a little over one-third from apex of discal cell.

Length, 4 mm.

*Type*.—Barro Colorado, Panama Canal Zone, July 16, 1923 (R. C. Shannon). Cat. No. 28447, U.S.N.M.

The tripunctate face, fusion of median thoracic vittae with the normal pair of black spots at apex of scutellum, and conspicuously marked wings separate this species from any of its allies.

MINETTIA OCTOVITTATA Williston

This species is the most closely related to the foregoing. The face has but one black spot, on the lower margin, the cheeks are unspotted, the frontal vitta is much paler and more diffused, the second antennal segment is yellow, the thoracic vittae broader and less intense in

color, the abdomen has three series of black dorsal spots, in addition the lateral edges of both the tergites and sternites are black, and the wing markings are not so extensive nor so dark, there being a rather noticeable isolated spot about middle of last section of fourth vein.

*Locality*.—Base of Corcovado, Rio de Janeiro, Brazil, August 18, 1915 (P. G. Russell). Originally described from the Island of St. Vincent, British West Indies.

MINETTIA PICTICORNIS Coquillett

Differs from the two preceding species in having the wings almost without dark clouds, only a faint suffusion being present on the two cross veins. The basal two antennal segments are black, the face has but one black spot, there is a faint dark mark on lower margin of cheek at middle, and the thoracic dorsal vittae are narrow and brownish, being much paler than the apical pair of scutellar spots.

Specimens are before me from Panama Canal Zone and Guatemala. Originally described from Nicaragua and subsequently recorded from Texas.

MINETTIA EVITTATA, new species

*Female*.—Tawny yellow, slightly shining. Face with a round velvety black spot in center of its lower margin; ocellar triangle hardly darkened; antennae yellow, third segment missing in type; palpi yellow. Thorax without vittae; two black spots at apex of scutellum. Apices of abdominal tergites faintly and narrowly darkened, the apical three with a faint dark central line. Legs yellow. Wings marked as in figure 2, the markings fuscous.

A robust species. Postvertical and orbital bristles long and strong, ocellar pair fine and short, surface of frons with numerous fine black hairs; face opaque, almost flat; cheek higher than width of palp, the marginal hairs carried upward to about middle of sides of face; occiput strongly haired, especially below. Thorax with three strong pairs of postsutural dorsocentral and one strong pair of prescutellar acrostichal bristles; the posterior intra-alar strong, and one bristle in line between it and the supra-alar; mesopleural hairs strong, setulose below; both sternopleurals strong. Abdominal tergites with strong marginal bristles. Fore femur without an anteroventral comb; mid tibia without posterior median bristles; hind femur with some short preapical anteroventral bristles. Venation as in figure 2.

Length, 7 mm.

*Type*.—Barro Colorado, Panama Canal Zone, July 17, 1923 (R. C. Shannon). Cat. No. 28448, U.S.N.M.

A rather aberrant species owing to the presence of a distinct bristle in line between the posterior intra-alar and supra-alar bristles. The

wing markings are somewhat similar to those of *octovittata* Williston, but the thorax is devoid of vittae and the cephalic and abdominal markings are different.

**MINETTIA TINCTINERVIS, new species**

*Female*.—Clay yellow, shining. Head opaque, face slightly shining, frons and face with slight white dusting; antennae and palpi yellow. Thorax not vittate; scutellum with a pair of deep black spots at apex. Abdominal tergites each with a narrow, centrally interrupted, black fascia on hind margin, broadest on sixth where it forms a large spot on each side. Legs yellow, apices of hind tibiae browned. Wings grayish hyaline, narrowly dark brown along costa from apex of auxiliary vein to apex of fourth, more broadly so on both cross veins, narrowly so on third and fourth veins from inner cross vein to apices, and on fifth vein from near base to apex. Halteres yellow.

Frontal bristles rubbed off in type, but the ocellar pair apparently small, postverticals situated well below edge of vertex, separated by about as great a distance as they are from ocelli; orbits poorly differentiated, anterior bristle rather far from eye; arista short pubescent; face flat; eye higher than long; cheek not as high as width of third antennal segment; lower margin of occiput with two strong bristles on each side. Thoracic bristling as in *evittata*, but without the bristle between the intra-alar and supra-alar bristles, and the anterior sternopleural is very small; scutellum broader than long, apex almost transverse, disk flattened; propleural bristle minute. Fore femur without anteroventral comb; hind femur without distinct anteroventral bristles. Wings rather narrow; last section of fourth vein slightly bent forward at apex, not over 1.5 as long as preceding section; inner cross vein at two fifths from apex of discal cell; outer cross vein at about half its own length from apex of fifth vein.

Length, 7 mm.

*Type*.—Higuito, San Mateo, Costa Rico (P. Schild.) Cat. No. 28449, U.S.N.M.

Distinguished from the other species with bipunctate scutellum by the almost bare arista, unspotted face, and narrowly clouded wing veins.

**MINETTIA FUSCINERVIS, new species**

*Female*.—Similar to *tinctinervis*, differing in having the scutellum without apical black spots, the tergal marks broader and more produced at their inner extremities, where they project forward angularly, the fifth tergite with the marks fused in center, forming a large triangular central spot, and not two lateral spots.

The postvertical bristles are closer together, and the inner cross vein of wing is a little nearer middle of the discal cell causing the last section of fourth vein to be very slightly longer than the preceding section.

Length, 7 mm.

*Type*.—Cayenne, French Guiana (W. Schaus). Cat. No. 28450, U.S.N.M.

This species appears to be very close to the genus *Melinomyia* Kertész, the only difference being that in the latter there is a bristle near the upper anterior angle of the mesopleura which is absent in the present species. Structurally they are almost identical judging from Kertész's figure and description.

**MINETTIA BIPUNCTATA (Say)**

This species is smaller than *evittata*, being about 4 mm. in length. The face is unspotted, the thorax is without vittae, the pair of apical spots on scutellum are small, the abdomen has very narrow dark hind margins to the tergites and a series of dark spots in center apically, while the wings are browned along costa as far back as third vein, beyond it apically, and both cross veins are brown clouded.

The frons is not one-third of the head width; the orbital bristles are long, the anterior one not far removed from eye; arista subnude; occiput strongly setulose. The anterior pair of the three pairs of postsutural dorsocentral bristles is very close to suture; both sternopleurals and the propleural bristle strong. Fore femur without anteroventral preapical comb. Outer cross vein of wing at two-fifths from apex of discal cell.

Originally described from Mexico and recorded from the West Indies. I have before me a specimen from Kingston, Jamaica.

**MINETTIA GENISETA, new species**

*Female*.—Testaceous yellow. Frons opaque, shining on orbits and triangle; face slightly shining, sides grayish yellow dusted. Thorax and abdomen immaculate. Wings grayish hyaline, cross veins almost imperceptibly clouded.

Frons at vertex a little less than one-third of the head width, widened anteriorly; orbital bristles long and strong, the anterior one farther from eye than posterior one; oceller bristles parallel, of medium length, situated behind level of anterior ocellus; postvertical bristles situated well below the rounded vertex, larger than ocellars; arista plumose; one or more of the postocular setulae at lower level of eye strongly developed, bristle like, the usual two strong bristles present on lower margin of occiput on each side. Postsutural dorsocentral bristles in three pairs, prescutellar acrostichals strong;

intradorsocentral setulae in about twelve series; posterior intra-alar rather short; propleural strong; anterior sternopleural bristle short; scutellum flattened above, slightly rounded in outline between the apical bristles; prosternum with a few hairs near front margin. Apical bristles on tergites quite distinct. Fore femur without anteroventral comb; mid tibia with four or five short bristles or setulae on posterior side; hind femur with one or two short preapical anteroventral bristles. Inner cross vein noticeably beyond middle of discal cell; last section of fourth vein about 1.5 as long as preceding section.

Length, 5 mm.

*Type*.—And one paratype, Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28451, U.S.N.M.

This species and the next are distinguished from other unicolorous yellow species of the genus by the very well developed lower postocular bristle or bristles, and the presence of setulae or bristles on posterior side of mid tibia.

#### MINETTIA ASSIMILIS, new species

*Male*.—Very similar to the preceding species, but more distinctly shining, and with both cross veins quite noticeably clouded even to the unaided eye.

The intra-alar bristle is stronger and the small bristle caudad of the supra-alar is evident, the mid tibia has from two to four rather long strong posterior bristles, and the size is greater.

Length, 6-7 mm.

*Type*.—Male, Cano Saddle, Gatun Lake, Panama Canal Zone, May 6, 1923 (R. C. Shannon). Paratype, Venezuela. Cat. No. 28452, U.S.N.M.

A specimen from Trinidad Island has the costa a little browned but is evidently the same species.

#### MINETTIA TRISERIATA (Coquillett)

Subopaque, clay yellow. Apical three or four tergites each with three small round black spots, one on median line, the others at lateral curvature. Wings hyaline.

Ocellar bristles minute; orbitals strong; arista very short haired. Thorax with three pairs of postsutural dorsocentrals and one pair of prescutellar acrostichals, the intra-alar weak but distinct. Fore femur without anteroventral comb. Inner cross vein at middle of discal cell.

Length, 2.5 mm.

Originally described from Nicaragua. One specimen, Higuito, San Mateo, Costa Rica.

The above description is given to place upon record the essential features not in the original description. From this species *punctifer* Malloch differs in having the thoracic dorsum with brown dots at bases of the bristles and hairs. In other respects the two are very similar.

MINETTIA FRONTALIS Macquart

I identify as this species two specimens with the following characters: General color fulvous yellow. Frons with a velvety black triangular spot on each side between the shining orbits and eyes, the anterior margin of which is a little proximad of the anterior orbital bristle; orbits and triangle almost glossy, the latter extending almost to anterior margin, the interfrontalia on each side of it opaque brownish. Thorax immaculate. Abdomen with blackish hind margins to tergites, the apical two or three tergites each with a dark central mark. Apices of hind tibiae slightly browned. Costal margin dark brown, more broadly so from opposite inner cross vein to beyond apex of fourth vein, the dark color on apices of third and fourth veins slightly divided by a longitudinal hyaline streak inwardly; both cross veins broadly dark brown, and fifth vein faintly clouded.

Ocellar bristles short and fine; postverticals long; arista plumose. Thorax as in last species. Mid tibia with 3-5 short posterior bristles. Venation of wings as in last species.

Length 6-6.5 mm.

Localities, Tucurrique, and Carillo, Costa Rica (Schild and Burgdorf). I am not certain of the identity of this species because Macquart's description leads one to expect that his species has a short villose arista, and he gives 4 mm as the length. This is however the only species which I have seen from South America with two triangular black marks on the frons, and it agrees very well in other respects with the description of *frontalis*. An examination of the type of *frontalis* will determine if my identification is correct.

MINETTIA CHILENSIS (Schiner)

A shining fulvous yellow species, with apices of palpi black, and tarsi infuscated apically. Wings yellowish hyaline.

Arista pubescent; all frontal bristles, including the ocellars, long, and strong; postverticals below the rounded edge of the vertex; lower occiput with regular setulae and the usual two strong bristles on lower margin. Intradorsocentral setulae in six series; thoracic dorsocentrals as in *triseriata*. Fore femur without anteroventral comb; mid tibiae without posterior median bristles.

Length, 5 mm.

Angol, Chile, January, February, and March, 1925.



## MINETTIA GEMINATA (Fabricius)

A very conspicuously marked yellow species, strikingly resembling *Alloclusia philippi* Rondani in thoracic and wing markings. Frons without a dark central line; face unspotted; cheek, center of sides of labrum, and apices of palpi, fuscous. Dorsum of thorax with two dark brown vittae which extend to apex of scutellum; pleura with two similar vittae, making six in all on thorax. Apices of abdominal tergites with black transverse line in center. Apices of all femora and of mid and hind tibiae, fore tibiae except bases, all of fore tarsi, and apices of mid and hind tarsi black. Wings marked as in figure 19.

Ocellars small; arista moderately long-haired. Postsutural dorso-centrals 3 or 4 pairs the anterior two pairs short; a distinct bristle in line between the intra-alar and supra-alar bristles. Fore femur without anteroventral comb.

Length. 6-7 mm.

Many specimens from Costa Rica.

## Genus PSEUDOGRIPHONEURA Hendel

Although the genotype of *Pseudogriphoneura* Hendel and that of *Deceia* Malloch differ strikingly in habitus, the former being a very robust species and the latter quite slender, I hesitate to consider them as entitled to more than subgeneric separation. Apart from the general habitus *Deceia* has the ocellar bristles strong, while in *Pseudogriphoneura* these are very small and weak. Accepting these as subgenera we must perforce place all the subgenera accredited to *Deceia* in the recent paper by W. L. McAtee and the writer under *Pseudogriphoneura*. I have found several species of this subgenus in the United States National Museum and present a key for their separation herein.

## KEY TO SPECIES

1. Legs entirely yellowish white; wings clear; apices of abdominal tergites testaceous yellow ----- pallipes, new species.  
At least the femora black or dark gray ----- 2
2. Wings with more than the apical half deep brownish fuscous; fore tarsi stouter at apex of first segment and on entire second than at base of first; apices of abdominal tergites not yellow ----- cormoptera Hendel.  
Wings hyaline, without dark cloud ----- 3
3. Apices of abdominal tergites rather broadly yellowish; thorax quite noticeably quadrivittae with brown ----- variata Hendel.  
Apices of abdominal tergites not noticeably yellow; thorax without apparent brown vittae ----- hyalipeunis, new species.

## PSEUDOGRIPHONEURA CORMOPTERA Hendel

This species has a great resemblance to some of those in *Griphoneura*, the similarity being heightened by the very distinctly marked wings.

I have before me 4 specimens from Juan Vinas, Costa Rica (P. Schild).

This species probably influenced Hendel to use the above generic name for the group.

PSEUDOGRIPHONEURA VARIATA Hendel

Black, densely lead grey pruinose. Antennæ brownish yellow; a dark mark on cheek below middle of eye; palpi brown. Thoracic dorsum with two faint, narrow brown submedian vittae, and between these and lateral margins a similar less distinct brownish vitta; area surrounding prothoracic spiracle rather conspicuously white dusted. Abdomen colored as thorax, but the tergites with broad, testaceous yellow hind margins. Legs white, coxae and femora, except extreme apices of latter, black, fore tarsi sometimes dark on apical two or three segments. Wings hyaline. Halteres yellow.

Both pairs of fronto-orbital bristles strong, curved backward; ocellars very small; arista plumose. Prescutellar arostichals strong. Inner cross vein at middle of discal cell; last section of fourth vein from 2 to 2.75 as long as preceding section; outer cross vein at a little less than its own length from apex of fifth.

Length, 4-5 millimeters.

Higuito, San Mateo, Costa Rica (P. Schild).

This is the species described as *Sapromyza varia* by Coquillet. I consider it is the same as *P. cinerella* Hendel.

PSEUDOGRIPHONEURA PALLIPES, new species

*Female*.—Differs from the above in having the frons darker grey, face yellowish on sides and above, antennae paler; thorax whitish grey in center and purplish grey on lateral third on each side; legs including coxae stramineous.

Structurally similar to above, but the last section of fourth vein is barely more than twice as long as preceding section in female.

Length, 5.5 millimeters.

Higuito, San Mateo, Costa Rica (P. Schild).

*Type*.—Cat. No. 28453, U.S.N.M.

PSEUDOGRIPHONEURA HYALIPENNIS, new species

*Male and female*.—Similar to *variata* but darker in color, and with the dark thoracic vittae absent or much less distinct than in that species. The abdomen has no yellow apices to tergites, and the pale parts of the legs in the male are more yellow than white.

There are no noticeable structural distinctions externally.

Length, 4.5-5 mm.

*Type*.—Male, allotype and 5 paratypes, Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28454, U.S.N.M.

## Subgenus MELANOMYZA Malloch

## PSEUDOGRIPHONEURA (MELANOMYZA) LATERALIS, new species

*Male and female.*—Shining black, antennae yellow, legs and halteres stramineous; anterior half of each orbit opaque velvety black, remainder of frons glossy black; pleura opaque; scutellum shining. Wings slightly grayish, outer cross vein very faintly clouded.

Anterior orbital bristle about half as large as posterior one; ocellars microscopic; antennae stout, third segment tapered a little apically, barely twice as long as its basal width; arista plumose; face convex; cheeks linear. Thorax with two pairs of strong dorso-centrals; prescutellar acrostichals absent. Inner cross vein distinctly beyond middle of discal cell; outer cross vein at more than its own length from apex of fifth vein; last section of fourth vein nearly four times as long as preceding section.

Length, 3 mm.

*Type.*—Male, allotype, and one male and one female paratype, Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28455, U.S.N.M.

The only species known to me which has the sides instead of the center of frons velvety black.

## PSEUDOGRIPHONEURA (MELANOMYZA) ALIENA, new species

*Male.*—Head black, frons with interfrontalia opaque velvety from anterior ocellus to antennae, the orbits and ocellar region glossy; face yellow; antennae yellow, third segment back except at base; arista fuscous; palpi yellow. Thorax black, shining, greasy in type; pleura opaque, black, upper parts of mesopleura and sternopleura whitish pruinulent. Abdomen black. Legs including coxae stramineous, fore femora with a faint dark mark near apices on posterior side. Wings greyish, a slight dark cloud near apex of second vein and disk of wings slightly brownish. Halteres dusky yellow.

Ocellar and postvertical bristles minute; orbital bristles weak, the front pair especially so; antennae fully as long as height of head; basal segment as long as second, third four times as long as broad, not very slender; arista long haired above, short haired below; face slightly receding below; cheek linear. Only one pair of distinct dorsocentrals present, and no prescutellar acrostichals; pleural bristles weak. Abdomen long and slender. Legs slender, longer than usual, the preapical tibial bristle lacking. Wings about three times as long as wide, inner cross vein at middle of discal cell, last section of fourth vein nearly three times as long as preceding section.

Length, 2.75 mm.

*Type and 2 paratypes.*—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28456, U.S.N.M.

A very slender species, with the habitus of an Anthomyzid, but evidently an aberrant *Melanomyza*, lacking the tibial bristle and anterior pair of dorsocentral bristles. Possibly entitled to sub-generic segregation.

PSEUDOGRIPHONEURA (NEODECIA) MARMORATA, new species

*Female.*—Head black, densely gray pruinose, center of frons faintly brownish, a spot between each antenna and eye and a narrow cross band above mouth margin brown. Thorax concolorous with head, with three broad dark brown dorsal vittae, the median one extending over disk of scutellum, a brownish mark below humeral angle and another along lower margin of mesopleura. Abdomen densely gray pruinose, with three large irregular dark brown spots on anterior half of each tergite and quite large dots of same color at bases of the bristles along hind margins of tergites which connect with the large anterior markings. Coxae and femora fuscous, trochanters paler, tibiae white, both extremities black; tarsi white, apices of fore pair black. Wings yellowish, with a dark cloud between apices of auxiliary and first veins and fainter clouds on both cross veins. Halteres yellow.

Frons flat, a little over one-third of the head width, and broader than long; ocellar bristles strong; anterior orbital a little shorter than posterior one; face almost vertical, flat; cheek narrow; third antennal segment longer than wide, quite noticeably pilose; arista plumose. Thorax with two pairs of dorsocentrals and one pair of strong prescutellar acrostichals. Inner cross vein a little before middle of discal cell: last section of fourth vein nearly twice as long as preceding one.

Length, 3 mm.

*Type and six paratypes.*—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28475, U. S. N. M.

The strikingly marked abdomen of this species, readily distinguishes it from *cineracea* Coquillett, the genotype and only recorded species of the subgenus. The eyes in *marmorata* are not much narrowed below as in *cineracea*, and all the species in *Pseudogriphoneura*, but it appears to me unnecessary to erect a subgenus for its reception at this time. There are a number of species before me from South America which agree with the above one in the bristling of the thorax, a character they have in common with all the segregates of *Pseudogriphoneura*.

Genus *SAPROMYZA* Fallén*SAPROMYZA ORNATA* Schiner

This is a rather aberrant species, of a general testaceous yellow color, the frons entirely shining, face with a pair of submedian vertical dark lines, the abdomen with a series of dorsocentral spots and larger transverse lateral marks black, the latter least distinct on tergite 3 and most distinct on tergite 4; fore femora darkened at apices on anterior surface. Wings yellowish, outer cross vein and apex faintly darker.

Anterior orbital bristle rather small, far from eye; ocellars practically absent; arista short haired. Thorax with two pairs of dorsocentral bristles and one pair of prescutellar acrostichals; anterior sternopleural very small; scutellum convex. Fore femur without anteroventral comb. Inner cross vein at middle of discal cell; penultimate section of fourth vein fully three-fifths as long as ultimate one.

Length, 5.5–6 mm.

Two specimens, Higuito, San Mateo, Costa Rica (P. Schild).

*SAPROMYZA UMBROSA* Loew

Specimens of this North American species are before me from Higuito, Costa Rica, and Panama Canal Zone, which differ little from those obtained in the vicinity of Washington, D. C.

*SAPROMYZA NIGROAPICATA*, new species

*Female*.—Frons brown, yellow across anterior margin, ocellar spot and orbits fuscous, face brownish testaceous, parafacials white pruinescent, a dark spot between base of each antenna and eye; occiput black, upper central third yellowish brown, entire head shining; basal two antennal segments black, third missing in type; palpi fuscous; cheeks yellow. Thorax and scutellum shining black above, sides of mesonotum becoming yellowish, pleura testaceous yellow, darkened above. Abdomen brownish testaceous, shining, paler on venter. Legs yellow testaceous, apices of all femora conspicuously but narrowly blackened, extreme bases of tibiae slightly darkened. Wings hyaline. Halteres yellow.

Ocellar bristles short, postverticals long, widely separated; anterior orbital much shorter than posterior one; frons without surface hairs; eye narrowed below; cheek linear. Thorax with two pairs of dorsocentrals and one strong pair of prescutellar acrostichals; intradorsocentral hairs in about eight series; scutellum elongate, flat above, sides rounded or bevelled off, bristles equal. Fore

femur without anteroventral comb; fore and hind tibiae with very short preapical bristle. Inner cross vein at middle of discal cell, outer at less than its own length from apex of fifth vein; last section of fourth vein three times as long as preceding section.

Length, 3.5 mm.

*Type*.—Barro Colorado, Panama Canal Zone, July 1, 1923 (R. C. Shannon). Cat. No. 28457, U.S.N.M.

The shining black thoracic dorsum and yellow legs with black tipped femora readily distinguish this from any known species of the genus.

### Subfamily PERISCCELINAE

This subfamily, as mentioned under the family discussion, is distinguished by the presence of but one orbital bristle, the divergent postvertical bristles, and the incomplete auxiliary vein of the wings.

So far only one of the genera has been recorded from the Old World but all four occur on this side of the Atlantic.

#### KEY TO GENERA

1. Auxiliary vein without indication of a forward bend at apex; face conspicuously protruded below----- 2  
Auxiliary vein with a distinct forward curvature at apex; face not conspicuously protruded below----- 3
2. Face conspicuously flattened, more or less shield shaped below antennae, the flat part bare, sides hairy----- *Scutops* Coquillett.  
Face evenly convex, entire surface hairy----- *Neoscutops*, new genus.
3. Face flattened but not conically produced below; space between bases of antennae about as wide as that between either antenna and eye; frons much over half of the head width; vibrissae small but distinct.  
*Sphyraperiscelis* Sturtevant.  
Face not flattened; space between bases of antennae linear; frons about half the head width; vibrissae not developed----- *Periscelis* Loew.

#### SCUTOPS FASCIPENNIS Coquillett

This species appears to be not uncommon in Costa Rica from whence I have seen some specimens collected by P. Schild.

I have figured the head (fig. 5) and the wing (fig. 3) of this species to show the distinction between it and the new species included in this paper.

#### SCUTOPS MACULIPENNIS, new species

*Male and female*.—Head yellowish white, with gray pruinescence, frons with a large black mark extending from vertex to beyond orbital bristle on each side, the triangle fuscous; face with a dark median stripe which has lateral branches about middle and is dilated at apex of the flattened area, below the latter there is a transverse black stripe from eye to eye; antennae whitish, second segment black, third darkened above; palpi broadly black at apices. Thorax black, dorsum with dense grey pruinescent markings as in figure 6, hu-

meral angles yellowish; pleura shining black, yellowish in middle and below posteriorly, with a median grey pruinose vitta. Abdomen shining black, with a pale yellowish spot on each lateral incurved portion of each tergite, which may extend on to disk of tergite. Legs pale yellow, coxae and femora largely or entirely black, all tibiae with two small annuli, all tarsi with the apical three segments black. Wings black, with many hyaline dots and spots (fig. 4). Halteres whitish.

Postverticals strong; ocellars long and parallel, in line with anterior ocellus and wider at base than width across posterior ocelli; the single orbital bristle long; one or two of the long lateral facial hairs situated on anterior edge of the flat area. Thorax with two pairs of postsutural dorsocentrals and one pair of prescutellar acrostichals; scutellum bare or disk, with four marginal bristles. Legs stout, preapical tibial bristle not distinguishable. Wing venation as in figure 4.

Length, 3-4 mm.

*Type*.—Female, allotype and paratypes, Mexico City, Mexico, January 1924. Cat. No. 28458, U.S.N.M.

The flattened part of face in this species is more broadly rounded below than in *fascipennis*, being almost transverse while in the latter it is rather obtusely pointed, presenting a subtriangular appearance. The wing markings and venation as well as the coloration of the head, thorax, and legs are very different in the two species, which are all that are now known as belonging to the genus.

#### NEOSCUTOPS, new genus

*Generic characters*.—Head (fig. 7) similar to that of *Scutops*, but the face is evenly convex, haired on entire surface, two of the hairs near middle of disk longer than the others, and there is a slight but evident central protuberance on middle of lower margin; frons about half of the head width, depressed in front, with one pair of orbital bristles, the anterior ocellus hardly more than its own length from vertex, laterals on vertex; ocellar bristles long, slightly convergent; postverticals divergent; arista plumose; vibrissae absent. Thorax in type covered with threadlike growth of mold or fungus, so that it is not possible to definitely decide the armature, but there appears to be but one pair of dorsocentrals and one pair of long scutellars present and no mesopleurals nor sternopleurals. Wing as in figure 8.

*Genotype*.—*Neoscutops rotundipennis*, new species.

#### NEOSCUTOPS ROTUNDIPENNIS, new species

*Female*.—Head testaceous yellow, shining, frons, upper part of face, and occiput, black. Thorax except humeri shining black, the

latter yellow. Abdomen black. Legs black, tibiae and tarsi yellow, hind tibiae more or less fuscous. Wings smoky. Halteres dark.

A robust species. Thorax fully as wide as long, scutellum twice as wide as its length at center. Legs stout, fore femur with strong posteroventral bristles; fore tibia with short posteroventral setulae.

Length, 1.75 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28459, U. S. N. M.

In this genus the wing venation shows an approach to that of *Steganopsis latipennis* Coquillett.

### Family AGROMYZIDAE

This family is distinguished from its allies by the presence of vibrissae, the postvertical bristles being divergent, the basal cells of wing both present, and the auxiliary vein very close to first vein or fused with it.

In this paper I describe one new genus and three new species.

#### SCHILDOMYIA, new genus

*Generic characters*.—Of the same habitus as *Odinia* Robineau-Desvoidy, but differing as follows: The divergent postvertical bristles much closer together, situated on edge of vertex, and more widely separated from posterior ocelli than length of ocellar triangle, the latter elevated; frontal lunule sparsely haired; orbital bristles in three pairs as in *Odinia*, the anterior pair incurved; an upwardly and forwardly directed bristle well above margin of cheek, not on margin as in *Odinia*. Only four pairs of dorsocentral bristles present, one pair presutural; posterior intra-alar present; scutellum haired on disk. Fourth wing vein not deflected apically, the first posterior cell therefore not widened, but slightly narrowed, apically, the costa not obviously discontinued at apex of third vein, but continued rather noticeably to apex of fourth. Hind femora not abnormally thickened, unarmed on anteroventral surface near apex.

*Genotype*.—*Schildomyia vittithorax*, new species.

#### KEY TO SPECIES

1. Arista long haired, plumose; prescutellar acrostichals absent; propleural bristle not duplicated; scutellum with a large dark brown spot on each side which cover entire lateral margins and almost meet in center of disk, leaving only the base and apex gray in center; orbits with dark spots..... *vittithorax*, new species.
- Arista pubescent; prescutellar acrostichals present; propleural bristle duplicated; scutellum with the lateral margins pale..... 2
2. No dark spots at bases of the frontal orbital bristles; antennae yellow.  
brevihirta, new species.
A dark spot at base of each orbital bristle; antennae largely black.  
punctifrons, new species.



## SCHILDOMYIA VITTITHORAX, new species

*Female*.—Head clay colored, with the following dark brown marks. A streak over ocelli to vertex, interfrontalia except the triangle, a spot at base of each orbital bristle, one between antennal base and eye, and a large portion of each side of occiput; antennae fuscous, base of third segment on inner side yellowish; palpi testaceous yellow. Thorax testaceous, densely pale gray pruinulent, with three broad chocolate brown vittae, the median one not extending to posterior margin except as a narrow point, a dark spot at base of each dorso-central bristle, a large dark mark on each side of scutellum, a fainter vitta on middle of mesopleura and pteropleura and a mark on sternopleura. Abdomen testaceous, with sides of disk of first visible tergite blackish brown, second, third, and fourth tergites almost black, with pale gray pruinulent markings on hind margins. Legs yellow testaceous, femora with one, tibiae each with two faint dark annuli. Wings hyaline, cross veins not distinctly clouded. Halteres yellow.

Frons longer than wide, a rather noticeable group of short setulose hairs at bases of the two anterior orbital bristles; arista plumose; cheek nearly half as high as eye, the latter longer than high. Discal thoracic hairs weak; basal pair of scutellar bristles about half as long as apical pair. Outer cross vein at its own length from inner and two-thirds that length from apex of fifth vein; last section of fourth vein about four times as long as preceding section.

Length, 3.5 mm.

*Type and 1 paratype*.—Higuito, San Mateo, Costa Rica (P. Schild). Paratype, Cano Saddle, Gatun Lake, Panama Canal Zone, August 5, 1923 (R. C. Shannon). Cat. No. 28460, U.S.N.M.

## SCHILDOMYIA BREVIHIRTA, new species

*Male*.—Differs from the preceding species in having no dark spots at bases of the frontal orbital bristles and antennae, in having two faint dark spots above mouth margin on face, the median thoracic vitta is narrowed on posterior third, but does not terminate in a narrow point, the lateral vittae are narrower and do not extend to margins.

The arista is very short haired. Prescutellar pair of acrostichal bristles present. Outer cross vein at about half its own length from inner, last section of fourth vein bent forward a little apically, as long as antepenultimate section and six or seven times as long as penultimate.

Length, 4.5 mm.

*Type*.—Cano Saddle, Gatun Lake, Panama Canal Zone, August 5, 1923. Paratype, Monto Lirio, Panama, April 6, 1923 (R. C. Shannon). Cat. No. 28461, U.S.N.M.

## SCHILDOMYIA PUNCTIFRONS, new species

*Male*.—Head much as in *vittithorax*, but the frons is rufous in front centrally, the face is fuscous, with dense gray dusting in middle, not with a black central mark, the cheeks are largely dark brown, and the antennae have the second segment and a spot on outer and another on inner side of third segment blackish. Thoracic dorsal markings as in figure 16; pleura with the following chocolate colored markings: a line along upper margin, a vitta on middle of mesopleura and pteropleura, interrupted on middle of former, another along upper margin of sternopleura, and the lower half of sternopleura. Abdomen black, hind margins of tergites narrowly yellow, becoming broader laterally. Coxae and femora almost entirely, and two annuli on each tibia, fuscous. Cross veins of wings rather noticeably clouded.

Structurally similar to *brevihirta*, but the cross veins are more widely separated, the fourth vein is less distinctly curved forward apically, and the size smaller.

Length, 3.5 mm.

*Type*.—Higuito, San Hateo, Costa Rica (P. Schild). Cat. No. 28462, U.S.N.M.

I am a little doubtful of the sex of this specimen and, as it is rather badly covered with filamentous growth, do not desire to tamper with it to determine whether it is a male or not, though I suspect that it is of that sex.

## Family DROSOPHILIDAE

## DROSOPHILA PANAMENSIS, new species

*Female*.—Head clay-yellow, densely yellowish pruinulent, ocellar spot, interfrontalia on each side of triangle, upper part of occiput, upper extremities of frontal orbits, cheek below middle of eye, and sides of labrum dark brown; antennae and palpi yellow. Thoracic dorsum chocolate brown, with lateral margins and four vittae in front of suture yellowish gray pruinulent, only the submedian pair extending beyond suture, behind suture there are five similar vittae, the median one least conspicuous; pleura concolorous with mesonotum, with a pale vitta over prothoracic spiracle and another from above fore coxa to below haltere; scutellum dark brown, with a grayish spot at apex and one on each side at base; postnotum dusky yellow. Abdomen testaceous yellow, each tergite with a centrally interrupted dark brown fascia on hind margin which extends to extreme lateral margins. Legs dark brown, fore pair missing in type, apices of femora, a basal and median annulus on tibiae, and all of tarsi of mid and hind pairs yellow. Wings brownish, most

noticeably so along costa, at apex of first vein, and on cross veins. Halteres yellow.

Eyes with minute stiff hairs; frons over one-third of the head width; ocellar and postvertical bristles strong; both reclinate orbitals distinct, the anterior one about midway between posterior and proclinate bristle, the latter almost at middle of frons; antennae distinctly separated at base; carina large and wide, with a slight median sulcus, ending a little above mouth margin; two vibrissae present; cheek as high as width of the dilated palpi. Thorax normal, intradorsocentral setulae in about twelve series. Abdomen stout. Legs normal. Wing as in figure 9.

Length, 4 mm.

*Type*.—Barro Colorado, Panama Canal Zone, July 16, 1923 (R. C. Shannon). Cat. No. 28463 U.S.N.M.

The only species of the genus known to me in which the first posterior cell of the wing is distinctly narrowed at apex.

*DROSOPHILA PILIFACIES*, new species

*Female*.—Head testaceous yellow, orbits and frontal triangle gray dusted, interfrontalia reddish orange, brownish along orbits; antennae testaceous, third segment brown; labrum fuscous. Thorax subopaque, brownish testaceous, dorsum with four broad dark vittae, the submedian pair most distinct; scutellum dark brown on disk, yellowish on sides; pleura largely fuscous, paler on sutures. Abdomen shining fuscous brown, yellowish on each side of each tergite along anterior margins. Legs brownish yellow, femora and coxae darkest. Wings brownish hyaline. Halteres with the knobs yellow.

Ocellar bristles long, parallel; postverticals long; anterior reclinate bristle short, situated behind the proclinate bristle, the latter distinctly proximad of middle of frons; interfrontalia almost bare; face with a well-developed central carina which is rather sharply rounded above and tapered off on lower half of face, the central part of latter below carina with minute erect hairs; cheek narrow; eyes stiff haired; vibrissae duplicated. Thorax with about six series of intradorsocentral setulae, two pairs of long dorsocentrals, and no pre-scutellar acrostichals; anterior sternopleural very short. Abdomen stout. Legs normal. Costa with a fine setula at apex of first vein, not deeply incised there; first costal division less than one-third as long as second, the latter less than twice as long as third; inner cross vein at about two-fifths from base of discal cell; fourth vein not bent forward apically.

Length, 2 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28464. U.S.N.M.

This is the only species I have seen in which there are hairs on center of face. I do not consider this character as sufficient to entitle its possessor to removal from the genus *Drosophila*.

**DROSOPHILA SPINICAUDA, new species**

*Female*.—Head pale clay yellow, upper occiput, frons except anteriorly on sides, lower margin of cheeks, and face except carina, pale brownish; antennae pale; palpi pale brownish. Thorax colored as head, dorsum more brownish, with three dark vittae, a fuscous brown mark along hind side of humeral callosity, and a black spot in front of supra-alar bristle above wing base; scutellum pale brown, yellow on basal lateral angles; large dark brown marks on mesopleura, sternopleura, and pteropleura. Abdomen with hind margins of tergites 1 to 4 dark brown, the dark color extending the whole length of tergites in center, tapered off on sides, and not connected with the dark mark on extreme lateral edges; fifth tergite with a triangular dark mark on hind margin. Legs clay yellow, femora at bases, and a basal and apical annulus on each tibia brownish. Wings faintly browned. Halteres black.

Head in profile as in figure 12; eyes hairy; frons widened above; facial carina prominent, evenly rounded, two-thirds of the face length; third antennal segment pilose. Thorax normal; intradorsocentral hairs in 8-10 series; prescutellar acrostichals absent; scutellum flattened; both sternopleurals distinct. Legs normal. Second costal division fully three times as long as second and over 1.5 as long as third; second vein straight to apex; inner cross vein a little over one-third from base of discal cell; outer cross vein about 1.5 its own length from apex of fifth vein; last section of fourth vein fully 1.5 as long as preceding one; ovipositor in side view as in figure 11.

Length, 3 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28465, U.S.N.M.

This species is closely related to *annularis* Sturtevant, but differs in venation, color, and in having the facial carina nonsulcate.

**DROSOPHILA NIGRICOSTA, new species**

*Female*.—Tawny yellow, slightly shining. Abdomen fuscous on dorsum. Legs yellow. Wings hyaline, marked with fuscous as in figure 10. Halteres yellow.

Eyes sparsely haired; frons convex; ocellar and postvertical bristles large; lower reclinate bristle small, noticeably proximad of proclinate one; face with a slight carina just below bases of antennae; cheek linear; one vibrissa only, which is situated above

mouth margin, the latter rounded. Thorax with normal bristling, intradorso-central setulae in about 8 series; both sternopleurals distinct; legs normal.

Length, 2 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28466, U.S.N.M.

This species resembles some of those in *Chymomyza*, but despite the position of the lower reclinate bristle is a true *Drosophila*.

**DROSOPHILA BICOLORIPES, new species**

*Male*.—Similar to *nigricosta*, differing in having the costal cloud fainter, and absent in marginal cell except narrowly along costal vein and at base and apex; the outer cross vein has a conspicuous dark brown cloud over it, and the tip of wing is faintly clouded. The fore femora except base, all of fore tibiae and the fore metatarsi are black, the apical four segments of fore tarsi whitish.

Head bristles mostly rubbed off but the scars indicate that they are similar to those of last species. Inner cross vein at about two-fifths from base of discal cell, second and third costal divisions subequal, outer cross vein nearer to apex of fifth vein than in *nigricosta*.

Length, 2 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28467, U.S.N.M.

**AMIOTA STEGANOPTERA, new species**

*Female*.—Shining black, lower half of face, a spot on each humeral angle, and one on each pleura below wing base, milk white; basal visible abdominal tergite in center, and second narrowly at base, yellow. Bases of antennae, and the palpi yellowish. Legs and halteres testaceous yellow. Wings hyaline.

Orbital bristles on moderate length; postvertical bristles microscopic. Thorax normal, scutellum convex, rounded in outline, the margin thick, bristles equal in length. Wing venation as in figure 18: third costal division with some widely separated short wart-like spines on under surface as in *Stegana* and *Leucophenga*.

Length, 2.5 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28468, U.S.N.M.

No other species of the genus which I have seen has the warlike spines on costa, the character being previously recorded only in *Stegana* and *Leucophenga*, and the color of the abdomen is distinct from that of any other described species. The species might be separated from *Amiota*, at least subgenerically, but there is nothing to be gained by such a course as the other characters are identical with those of typical species of that genus.

## LEUCOPHENGA UNIFASCIVENTRIS, new species

*Female*.—Head, thorax and legs fulvous yellow, abdomen black, with a broad fulvous yellow fascia covering second and third visible tergites. Wings hyaline, marked as in figure 13.

Postvertical bristles microscopic; orbital bristles long; cheek linear. Wing venation as figure 13.

Length, 2 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28469, U.S.N.M.

Distinguished from any known American species by the unifasciate abdomen. Several Oriental and Australian species have abdominal markings like this one.

## LEUCOPHENGA ACUTIPENNIS, new species

*Female*.—General color as in last species, the palpi and disk of scutellum darker, abdomen marked as in figure 17, the outer black spot on each side on the incurved lateral margin of tergite so that it is not visible from above. Wings as in figure 14.

Structurally similar to last species, the palpi but little dilated, but the wings are quite acute at apices and the position of the outer cross vein is different.

Length, 3 mm.

*Type*.—And one paratype, Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28470, U.S.N.M.

## LEUCOPHENGA TRIPUNCTIPENNIS, new species

*Female*.—Similar to *unifasciventris*. First visible tergite yellow, second with 3 large black spots, third with 5, the one on each lateral margin invisible from above, fourth tergite with apparently 5 spots, the median one linear, fifth with at least one on each side, but type in poor condition to see details. Wings as in figure 15.

Length, 3 mm.

*Type*.—Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28471, U.S.N.M.

## LEUCOPHENGA ARGENTIVENTRIS Kahl

In his original description of this species Kahl states that the "apical segments [of abdomen] show some blackish or dusky in the specimen, but this may be caused by deterioration." In the specimen before me there are five black spots on fourth and fifth tergites, the outer one of each series on each tergite not visible from above. The silvery white dusting on thorax and abdomen, visible when the specimen is viewed from in front, as well as the conspicuously marked wings, which are somewhat similar to those of *acutipennis*, distinguish this species from its congeners.

*Locality*.—Higuito, San Mateo, Costa Rica (P. Schild).

## LEUCOPHENGA FRONTALIS (Williston)

This species has the wings without distinct dark markings, only the apex of first vein being blackish.

I consider that *ornativentris* Kahl is a synonym.

*Locality*.—Higuito, San Mateo, Costa Rica (P. Schild.)

Hendel has erected the genus *Oxyleucophenga* for the reception of one South American species, *undulata* Hendel. The only distinction between this genus and *Leucophenga* is that the wings are more pointed in the former. If the genus is to be maintained then *acutipennis* above described belongs to it, but I am of the opinion that the genus is invalid, there being all degrees of variation in the acuteness of the wings. I place *Oxyleucophenga* as a synonym of *Leucophenga*.

## CLASTOPTEROMYIA MACULIPENNIS, new species

*Female*.—Head testeceous, shining, frons above and upper occiput darkened, ocellar spot blackish. Thorax brownish testaceous, shining, abdomen similarly colored, but darker. Legs stramineous. Wings fuscous, with the following hyaline marks: a transverse band close to base, a transverse mark about its own width beyond apex of first vein, which extends from costa to fifth vein, reaching the latter about as far from apex of discal as length of outer cross vein, a similar spot across middle of cell behind fifth vein, one across middle of second posterior cell, and one extending across wing from apex of second vein to fourth vein near middle of its apical section.

Ocellar bristles long; lower reclinate bristle microscopic; face not carinate; cheek linear; one vibrissa on each side. Both pairs of dorsocentrals distinct; prescutellar acrostichals absent; scutellum convex, bristles subequal. First costal division a little over one-fourth as long as second, the latter not 1.5 as long as third; veins 3 and 4 divergent at apices, section of costa between their apices fully half as long as the one before it; last section of fourth vein not twice as long as penultimate section; outer cross vein at about its own length from apex of fifth vein.

Length, 1.75–2 mm.

*Type*.—And one paratype, Higuito, San Mateo, Costa Rica (P. Schild). Cat. No. 28472, U.S.N.M.

This is the only species of the genus known to me which has the wings with conspicuous spots.

*Drosophila superba* Sturtevant I consider belongs to this genus, and is distinguished from the above species in having only three hyaline marks on the wing, and but one pair of distinct dorsocentral bristles.

## CLASTOPTEROMYIA LONGIPENNIS, new species

*Male*.—Head testaceous yellow, the face more whitish; ocellar spot fuscous. Thorax more brownish yellow above, pleura much paler, the former with faint traces of two vittae and a mark on each lateral margin behind suture; pleura with two broad dark brown vittae, one on middle of mesopleura and the other on upper margin of sternopleura. Abdomen fuscous. Legs clay yellow. Wings smoky brown. Halteres pale.

Ocellar bristles long; postvertical pair weak; lower reclinate orbital bristle very small, almost in transverse line with the strong proclinate bristle; eyes almost bare; face with a very slight central carina above; only one strong vibrissa. Thorax with but one distinct pair of dorsocentrals, the intradorsocentral hairs in about 10 series. Legs long and slender, fore femur without a comb. Wings elongate, anal angle not developed, general structure similar to that of *superba* Sturtevant; inner cross vein a little over one-fourth from base of discal cell; second costal division fully four times as long as first; third about 1.25 as long as first; first posterior cell a little widened at apex; penultimate section of fourth vein about four-fifths as long as ultimate; outer cross vein about 1.5 its own length from apex of fifth vein.

Length, 3 mm.

*Type*.—Male, Cat. No. 28473, U.S.N.M. Higuito, San Mateo, Costa Rica (P. Schild).

The general coloration, habitus, and elongate wings give this species much the appearance of a *Curtonotum*. It is possible that, with *superba*, this species might be subgenerically separated from *Clastopteromyia* on the basis of the single pair of dorsocentral thoracic bristles and the lack of a well developed anal angle to the wing, but further study of more material and information as to the habits of the larvae is desirable before such a course is resorted to.

## EXPLANATION OF PLATES

## PLATE 1

## Details of Sapromyzidae and Drosophilidae

- FIG. 1, *Xenopterella obliqua*, wing.  
 2, *Minettia evittata*, wing.  
 3, *Scutops fascipennis*, wing.  
 4, *Scutops maculipennis*, wing.  
 5, *Scutops fascipennis*, head from the side.  
 6, *Scutops maculipennis*, thoracic markings.  
 7, *Neoscutops rotundipennis*, head from the side.  
 8, *Neoscutops rotundipennis*, wing.  
 9, *Drosophila panamensis*, wing.

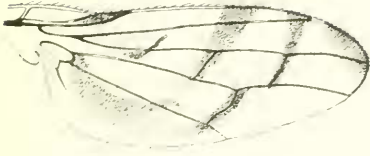


## PLATE 2

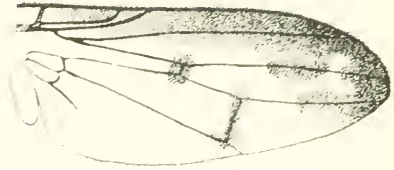
Details of Sapromyzidae, Drosophilidae, and Agromyzidae.

- FIG. 10, *Drosophila nigricosta*, wing.  
11, *Drosophila spinicauda*, ovipositor from the side.  
12, *Drosophila spinicauda*, head from the side.  
13, *Leucophenga unifasciiventris*, wing.  
14, *Leucophenga acutipennis*, wing.  
15, *Leucophenga tripunctipennis*, wing.  
16, *Schildomyia punctifrons*, thoracic dorsal markings.  
17, *Leucophenga acutipennis*, abdominal dorsal markings.  
18, *Amiota steganoptera*, wing.  
19, *Minettia geminata*, wing.  
20, *Neominettia contigua*, wing.

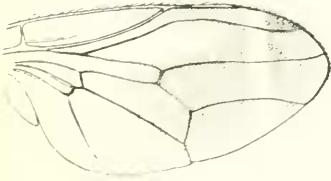




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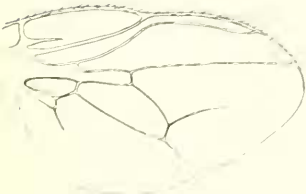
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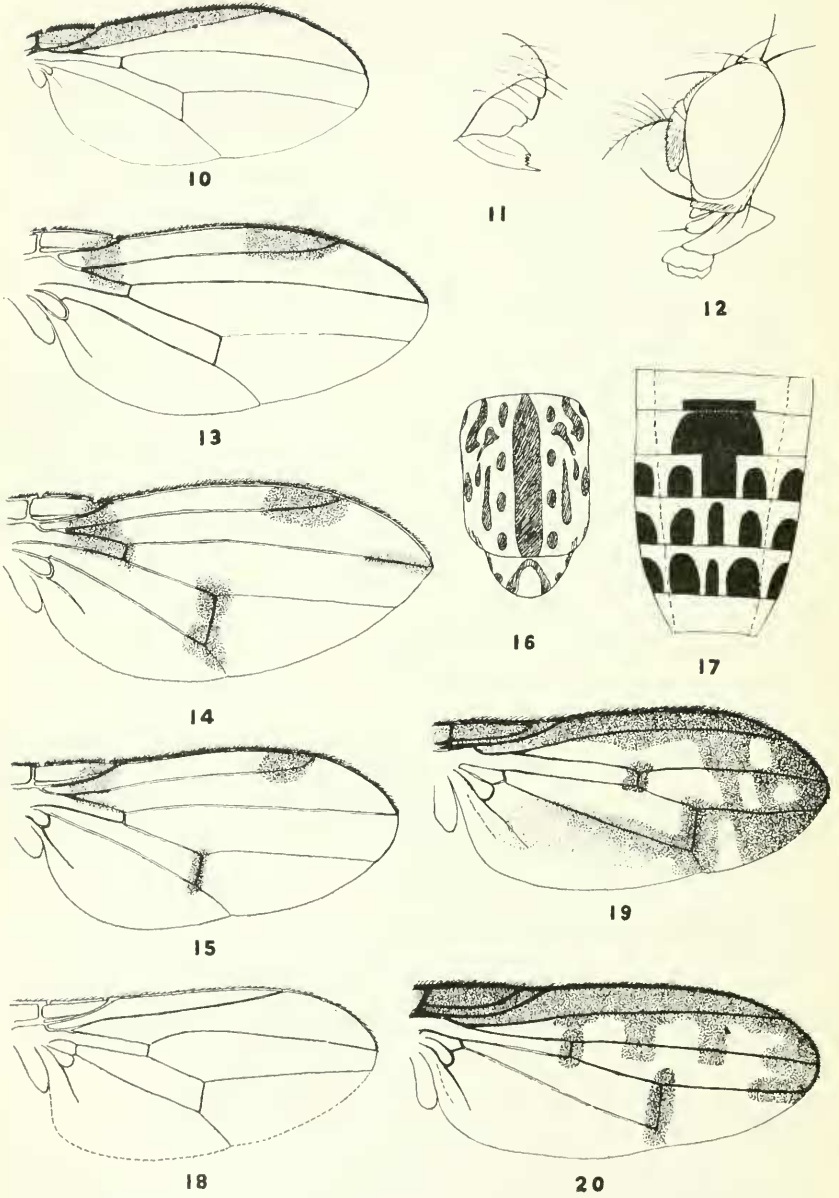
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9

DETAILS OF SAPROMYZIDAE AND DROSOPHILIDAE

FOR EXPLANATION OF PLATE EE PAGE 34



DETAILS OF SAPROMYZIDAE, DROSOPHILIDAE, AND AGROMYZIDAE

FOR EXPLANATION OF PLATE SEE PAGE 35